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CENTRAL INTELLIGENCE AGENCY 50X1-HUM
WASHINGTON, D.C. 20505

28 June 1974

MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT : MILITARY THOUGHT (USSR): The Use of Nuclear Means When Constructing Obstacles During an Operation

1. The enclosed Intelligence Information Special Report is part of a series now in preparation based on the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal 'Military Thought". This article discusses nuclear munitions as an efficient and necessary means for constructing obstacles to halt enemy forces. The use, deployment and control of nuclear mines are briefly examined, emphasizing the lack of Soviet expertise in this field, as compared with the US. The author calls for increased research and development aimed at forming a body of tactical-technical training information for the employment of nuclear mines. This article appeared in Issue No. 1 (83) for 1968. 50X1-HUM

2. Because the source of this report is extremely sensitive, this document should be handled on a strict need-to-know basis within recipient agencies. For ease of reference, reports from this publication have been assigned the [redacted] Codeword [redacted]. 50X1-HUM

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William E. Nelson
Deputy Director for Operations

FIRDB-312/02284-74

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Intelligence Information Special Report

COUNTRY USSR

FIRDB – 312/02284-74

DATE OF INFO. Early 1968

DATE 28 June 1974

SUBJECT

MILITARY THOUGHT (USSR): The Use of Nuclear Means When Constructing Obstacles During an Operation

SOURCE Documentary

Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 1 (83) for 1968 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The author of this article is General-Mayor of Engineer Troops V. Bystrov. This article discusses nuclear munitions as an efficient and necessary means for constructing obstacles to halt enemy forces. The use, deployment and control of nuclear mines are briefly examined, emphasizing the lack of Soviet expertise in this field, as compared with the US. The author calls for increased research and development aimed at forming a body of tactical-technical training information for the employment of nuclear mines.

End of Summary

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Comment:

General-Mayor V. Bystrov wrote an article about engineering work in areas hit by nuclear missiles, Voyennyy Vestnik, No. 11, 1966, and another on engineer support for a march through mountains, Soviet Military Review, No. 2, 1966. The SECRET version of Military Thought was published three times annually and was distributed down to the level of division commander. It reportedly ceased publication at the end of 1970.

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A Brief Discussion of an Important Subject:
The Use of Nuclear Means When Constructing Obstacles
During an Operation
by
General-Mayor of Engineer Troops V. Bystrov

The operational importance of obstacles has sharply increased under modern conditions. To ensure that the activities of our forces during an operation are effective, it will often be necessary to construct within a short period of time extensive barriers that the enemy cannot surmount, on the flanks of attacking formations of our forces as well as in front of large counterstrike groupings. The engineer forces and means available to the troops are not in a position to fully carry out such tasks.

Thus, when repelling an enemy counterstrike, a motorized rifle division using a mobile obstacle detachment consisting of one sapper company can lay a 1.5- to 2-kilometer antitank minefield within 15 to 20 minutes on a likely axis of tank approach against only one tank battalion. But it will take the mobile obstacle detachment at least 1 to 1.5 hours to receive and lay a second unit of fire of mines. An army mobile obstacle detachment (an engineer obstacle battalion) can lay 4.5 to 6 kilometers of antitank minefields at a time, which is quite negligible when compared to the overall width of the enemy zone of operations. Recently more and more attention has been given to minelaying from helicopters. This is certainly the most mobile method of constructing obstacles and has great potential, but at present, unfortunately, it cannot be employed on a mass scale.

The defensive value of the obstacles and demolitions now used, as analysis demonstrates, is also inadequate, and the expenditures of forces and means are not in all cases the equivalent of the anticipated effectiveness. Estimates show that during extremely dynamic combat operations we will not be able to construct quickly enough the necessary number of obstacles capable of stopping the enemy for the required period of time.

New technical means are needed to achieve a high level of effectiveness of obstacles on an operational scale, to sharply reduce the amount of time needed to construct them, and to increase their mobility. Nuclear munitions may constitute such means. A similar idea of using

"nuclear land mines" for the construction of defensive obstacles was outlined by General of the Army P. A. Kurochkin.*

The range of conditions under which nuclear mines (in our opinion a more accurate term) can be used to construct obstacles is rather broad. In addition to their basic use in battle and in an operation on the primary operational axes, nuclear mines used in conjunction with conventional explosive means and natural barriers, make it possible to cover sectors of the front where, at a given moment, offensive operations are not being conducted, or sectors of the national border that are under the threat of the initiation of a new front of armed combat. The construction of such obstacles will require a negligible amount of forces.

Nuclear mine obstacles will definitely bring enemy forces to a halt, thus permitting our rocket means and aviation to deliver strikes against them. These obstacles are fully adequate to the exceptionally mobile nature of combat operations which requires that not only the known axes of the enemy offensive be covered, but also that we react swiftly to a transfer of forces from certain axes to others. Moreover, they spare us the unavoidable "tying up" of the forces, assigned to prepare operational obstacles in advance and maintain them, that occurs when conventional explosives and mines are used.

Nuclear mines in an obstacle system can be used to destroy large bridges, road structures and groups of them, tunnels, hydrotechnical structures, the overhead cover of mountain passes, and to create flood zones and radioactive contamination of the terrain.

Since we do not have the opportunity to set forth in a long article the technical problems involved in the use of nuclear mines to construct obstacles and demolitions, let us examine, by way of example, their use for the purpose of destroying a group of structures. At large road junctions and at crossings of medium and wide rivers there are usually several automobile and rail bridges and overpasses that, from a modern point of view, are compactly situated. To destroy each one of them by conventional means would take tens of tons of explosives, a large amount of personnel, and, most important, a great deal of time. This entire group of structures could be destroyed by one nuclear mine of the appropriate yield. In that case the quota of personnel assigned would be substantially reduced, our troops could use the structures prepared for destruction with absolute safety up to the moment of the burst, and the reliability of destruction is total. Because of the extremely high levels of radiation, the enemy can begin work on building a bypass around the obstruction formed only after some time has elapsed following the burst.

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* Collection of Articles of the Journal "Military Thought", No. 2 (78), 1966.)

True, some are of the opinion that the same result could be achieved by using a rocket or an aircraft to deliver the nuclear charge. However, in that case, because of the law of dispersion, the required yield of the charge would increase tens of times and the required degree of obstacle effectiveness might not be achieved.

The basic advisability of using nuclear mines in a system of operational obstacles seems to us to be beyond challenge. Since they are highly effective, weigh little, and can be reliably handled by remote control, they can fundamentally alter the entire organization of obstacle construction and make it best conform to the way in which modern operations are conducted.

Here we might mention that in using nuclear mines, for the first time in the history of warfare, the conditions are created whereby, either incidentally by the construction of obstacles or by design, heavy losses of manpower and equipment can be inflicted on the enemy.

Which levels should have the right and capability to employ nuclear mines to construct obstacles, what range of yields will the charges have, and who will lay the mines and activate them? These and other important questions could constitute a subject for discussion in special articles. We would like to express a few of our ideas in quite general terms.

In view of the fact that obstacles constructed using nuclear mines should be employed primarily to facilitate the accomplishment of major operational tasks, and that the consequences of nuclear mine bursts will have an impact that is far from local, we must keep in mind the fact that the use of such obstacles is probably for the most part the prerogative of a front and of an army, and only to a very limited degree of a division.

Because the construction of such obstacles is of an extremely specialized nature, highly mobile, specialist engineer units and subunits must be formed, equipped with the appropriate nuclear means and capable of carrying out tasks with a small number of forces and with a high degree of effectiveness.

A manual (guide) must be developed that strictly regulates the rights and duties of persons dealing with the problems involved in using nuclear munitions to construct obstacles. It is especially important to determine who will give the order to activate these obstacles and what procedure will be used. Unfortunately, at the present time we do not even have a document regulating the use of conventional means to perform demolitions, even though it is known that during World War II this very question was the source of many serious misunderstandings.

The range of yields of nuclear charges used to construct obstacles and demolitions can probably be determined only after a serious study of the special characteristics of the theaters of military operations and estimates are made of the destruction of standard targets. To some degree it will depend on other factors as well, in particular on the transportability of the nuclear mines, capabilities for quickly laying them, and the composition of the servicing crew. However, it can even now be said that to destroy large dams, bridges, and other unique structures within builtup areas requires nuclear mines with a TNT equivalent in the range of q = 0.01 ÷ 0.5 kt; to construct obstacle complexes -- q = 5 ÷ 20 kt; to form flood zones in river valleys -- q = 50 ÷ 200 kt.

At the present time it would be premature to discuss the specific tasks of the units and subunits designated to use nuclear mines to construct obstacles, and even more premature to discuss the methods to be used in carrying them out. Both will largely depend on the equipment which they receive into their armament. It seems to us that these units and subunits, in addition to the means to be used directly in work with the nuclear devices, should have the most up-to-date technical equipment for boring holes, excavating mine chambers, and accomplishing other work within a short period of time, as well as fast, cross-country transport means, including helicopters. And, of course, they must have at their disposal means that provide them with reliable, interference-free remote control of the nuclear mines which they have laid.

Foreign armies are also extensively studying the problems involved in constructing and negotiating obstacles. Thus, the US Army as long as ten years ago put the use of nuclear munitions in the construction of obstacles and demolitions on a practical footing: several types of nuclear destructive charges with a yield ranging from 0.2 tons to 47 kilotons were developed, and special engineer subunits were formed. Both in the US and in the Federal Republic of Germany, cadres capable of using engineer nuclear charges are being trained.

The US and NATO armies regard obstacles containing nuclear munitions primarily as a means for supporting offensive activities--to cover flanks and axes on which, for the moment, no advance is planned, or to support the deployment of troops and their transition to the offensive. The compactness of existing engineer nuclear munitions in the US and the speed of their installation increases the possibilities of setting up obstacles within a short period of time during mobile combat operations.

Of course, the fact that nuclear mines are used does not at all mean that they will replace existing engineer obstacle means. Further development and improvement of the latter are planned. Extreme discretion

must be exercised in using nuclear mines to construct obstacles, and they must be employed only in those cases when the situation urgently requires their use and when their detonation will not impede our troop movements.

In training practice and combat preparation of troops, there are at the present time no uniform data on the nuclear means that could be employed to construct obstacles. Therefore it is difficult to calculate their anticipated effect, determine the methods and time of laying the mines, and the personnel and auxiliary means required, and also solve the problems of camouflage, control, security, and defense of nuclear obstacles. To fill this gap it would be extremely desirable to develop a body of tactical-technical training information on engineer nuclear mines. This would ensure unified and consistent solution of the entire problem and would spare our officers the necessity of using tactical-technical data on American nuclear means of destruction.

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